

living organic forms, there is a *temperature optimum*; which is as distinctly marked when, by heating, we rise to it from lower temperatures, as when we descend to it by cooling from higher temperatures.

FERTILISATION OF FLOWERS BY BIRDS.—In an interesting article by Prof. Asa Gray, in the *American Journal of Science and Arts*, on Darwin's recent work the writer notices what Darwin says about the fertilising of flowers by birds, chiefly humming-birds. The frequenting of the flowers of *Impatiens* is the only case cited from the United States; and Dr. Gray asks: "Can it be that there are no references in print to the most familiar fact that our humming-bird is very fond of sucking the blossoms of trumpet creeper (*Tecoma radicans*) and of honeysuckles? Both these are, in size and arrangement of parts, well adapted to be thus cross-fertilised."

A NEW PARASITIC GREEN ALGA.—Not very long since it was thought that the want of chlorophyll determined the parasitism of plants, and it is still true that the want of this green colouring substance serves to distinguish between fungi and algæ. It is also true that the former need already-formed carbon compounds, but it is still thought that chlorophyll-bearing plants not only do not require to find these compounds ready formed, but that they are absolutely unable to assimilate them. It was therefore a fact of great interest when Prof. Cohn described some years since (1872) a perfectly new chlorophyllaceous alga ("Ueber parasitische Algen" in *Beit. zur Biol. der Pflanzen*, Bd. i. Heft 2; see also W. Archer, *Quart. Journ. Mic. Science*, N.S., vol. xiii.), which he found living as a bright emerald green parasite in the thallus of duck-weed gathered at Breslau. For this the genus *Chlorochytrium* was established, and *C. lemnæ* was the only species until at a late meeting of the Dublin Microscopical Club, Prof. E. Perceval Wright exhibited and described a second species found growing and developing itself in the mucilaginous tubes of a species of *Schizonema*, collected on rocks at Howth, near Dublin, between high and low water-marks. There can be no question as to the parasite on the diatom being different from that on the duck-weed, while there is but little difficulty in placing it in Cohn's genus. Smaller in size its emerald lustre is scarcely if at all less than the fresh-water species, and like it its development has not been traced farther than the production of zoospores.

FLORA OF TURKESTAN.—We notice a very interesting communication on the Flora of Turkestan, made by Prof. Regel, the director of the St. Petersburg Botanical Garden, at the last meeting held on January 20, by the Russian Society of Gardening. The special aim of the communication being to advocate the introduction into European gardens of representatives of the flora of Turkestan, Prof. Regel described the numerous, original, and most beautiful species belonging to the *Compositæ*, *Caryophyllæ*, *Umbellifera*, *Fabionaceæ*, *Malvaceæ*, and *Campanulaceæ*, which grow in Turkestan, and which could rank among the best ornaments of our gardens by their variety and beautiful forms and colours. Most of these species are already cultivated with complete success in the St. Petersburg Botanical Garden, and they might be thus introduced in the gardens of Russia and Western Europe. Concluding his communication, Prof. Regel pointed out the remarkable circumstance that in Turkestan, even in hilly tracts, the *Ericaceæ* are totally wanting, whilst they are so common in the highlands of the Alps, of the Caucasus, and even of the Altai.

NOTES

METEOROLOGISTS everywhere will learn with much satisfaction that Dr. Julius Hann, the eminent meteorologist, was appointed, February 10, successor to the late Dr. Jelinek, as

Director of the Central-Anstalt für Meteorologie und Erdmagnetismus, Vienna.

FIFTY-SEVEN candidates for election into the Royal Society have offered themselves during the present session.

PROF. A. OPPENHEIM, of Berlin, has accepted the chair of chemistry in the newly-organised Philosophical Faculty at Münster.

PROF. PFEFFER, of Bonn, has accepted the ordinary professorship of Botany in the University of Basel.

THE Treasury have agreed to recommend votes from the Consolidated Fund for 80,000*l.* towards the new buildings devoted to the Science Schools of the University of Edinburgh, in four yearly instalments of 20,000*l.* each. This vote is to supplement a like amount subscribed by the public.

THE marble statue of Sir W. Fairbairn is in the hands of Mr. Geflowski, who obtained the Commission in competition with other eminent sculptors. Besides the statue, which is to stand in the New Town Hall, Manchester, facing the entrance, a Fairbairn scholarship is founded in Owens College, Manchester, out of the funds subscribed. The statue is eight feet high, representing Sir W. Fairbairn standing with papers in his hand as if delivering an address to a scientific audience, the head bare and inclined slightly, and an admirable likeness in the features as well as in the thoughtful expression and quiet energy characteristic of the man.

THE University of Tübingen is making preparations to celebrate its 400th anniversary during the coming month of August. Various historical addresses are in course of preparation, and a work will be issued commemorative of the occasion.

A PUBLIC meeting of the Sanitary Institute of Great Britain will be held at the rooms of the Society of Arts, John Street, Adelphi, on Wednesday, March 14, at 3 P.M., to consider the report recently issued by the Committee appointed by the President of the Local Government Board upon the disposal of town sewage.

HIS Majesty, the Emperor of Brazil, observed the eclipse of the moon on the evening of the 27th, at the Arcetri Observatory. The Emperor took a very lively interest in the phenomenon and discussed with acuteness the hypothesis with which Prof. Tempel, the astronomer, and Prof. Echert tried to explain the varying shades and colours in which the moon appeared during the different phases of obscuration. On Monday last his Majesty assisted at a meeting of the Anthropological Society, when Prof. Mantegazza made some interesting remarks on several Maori skulls, and Prof. Giglioli read an elaborate paper on the ethnology of Brazil.

THE general expenses of the seven Russian universities in 1876 were as follows:—The University of St. Petersburg, 43,500*l.*; of Moscow, 52,850*l.*; of Kieff, 38,375*l.*; of Kazan, 39,500*l.*; of Kharkof, 38,125*l.*; of Odessa, 25,375*l.*; and of Dorpat, 26,625*l.*

WE notice the following more important papers on natural science, among those published by professors of the Moscow University in 1876:—"Observations de Jupiter en 1876," "Profil spectroscopique du Soleil en 1876," and "Sur la Queue de la Comète de 1874," by Prof. Bredikhin, in the *Annales* of the Moscow Observatory; a paper, by Prof. Babukhin, "Ueber die Structur und Verhältnisse elektrischer und pseudo-elektrischer Organen," in the *Archiv für Anatomie und Physiologie*; "Théorie des Dérivées," and "On the Numerical Equations of the Second Degree," by Prof. Bugaïeff, in the *Moscow Mathematical Review* (Russian); the papers of Prof. Markovnikoff on Theine (*NATURE*, vol. xv. p. 167). An interesting popular lecture on Unicorns,

and on the origin of the myths on them, was delivered at the last anniversary of the University by Prof. Usoff.

M. DUMAS has been nominated president of the Société d'Encouragement pour l'Industrie Nationale. At the last meeting of the Society M. Moutenat exhibited metallic tubes which emit sounds when burning coal is placed in the interior. The sound is modified when the place occupied by the coal has been changed. A copper tube into which metallic gauze has been introduced also emits musical sounds. M. Moutenat is preparing to build large tubes for the International Exhibition of 1878. He hopes the sounds may be heard at a great distance, and if successful he intends to propose this method instead of steam whistles for warning on the sea-coasts.

THE Bradford Scientific Association purpose holding a conversazione and exhibition of scientific instruments and objects on the evenings of April 11 and 12. Exhibits will be arranged under various sections and sub-sections, and contributions will be welcomed.

FROM the Annual Report of the Geologists' Association we learn that the number of members on January 1 was 390.

VOL. 1. Part 6, of the *Transactions* of Watford Natural History Society contain papers on the Hertfordshire Bourne, by Mr. John Evans, F.R.S.; on the Hertfordshire Ordnance Bench Marks, by Mr. John Hopkinson, F.L.S.; and on the Polarisation of Light, by Mr. J. N. Harford.

MR. RUDKIN has given notice of his intention to move, at the next meeting of the Court of Common Council, that it be referred to the Gresham Committee to confer with the Mercers' Company as to whether and how the Gresham College foundation can be utilised and extended in connection with the scheme which is now being prosecuted by the Livery Companies for establishing a Central Technical University, with affiliated colleges and institutes, not only in the metropolis and its suburbs, but in the chief centres of industrial life throughout the United Kingdom.

THE Russian Government announces the discovery of valuable silver deposits in several islands of the White Sea.

GRAF WALBURG, a member of Dr. Brehm's expedition to Siberia, is now studying the botanical and palæontological collections at Dorpat. He proposes to undertake this year another journey to Asia and to explore the Caucasus.

THE St. Petersburg papers announce the return of Lieut. Onatsevitsh, who has spent two years in the survey of the Northern Pacific shores of Siberia. After having observed the Transit of Venus, Lieut. Onatsevitsh engaged in a full and thorough survey of Behring's Strait, extending his soundings into the glacial ocean as far as the ice barrier over a surface of about sixteen square degrees. Further, having at his disposal fourteen chronometers, he has determined many longitudes, and has brought into connection the longitudes formerly determined in the north-east with those recently determined with great accuracy before the Transit of Venus in south-eastern Siberia. The work done by M. Onatsevitsh will be the subject of communications at the next meeting of the St. Petersburg Geographical Society.

THE map of the mouth of the Obi, prepared by M. Duhl (who made last summer a detailed survey and soundings when descending the river on board the schooner *Moscow*, built in Tiumen), will appear in the course of a month or two.

THE *Afrikanische Gesellschaft* of Berlin received a few days since news from Dr. von Bary, who at the end of December was on the point of leaving the city of R'hat to penetrate into the mountain region of the Tuareks, in the central part of the Sahara. Hostilities had just ceased between the tribes inhabit-

ing this territory, and there was every probability of his successfully accomplishing the aims of the journey, viz., a careful geological study of this scarcely-known region.

IN the last session of the Berlin Geographical Society, the president, Dr. Bastian, announced that the well-known African traveller, Dr. Gustav Nachtigal, intended to undertake a new journey of exploration into the interior from the coast of equatorial Africa. This field, now rendered vacant by the death of Edward Mohr at Molange, has always been the favourite territory of the German explorers. Dr. Nachtigal's peculiar qualifications for the undertaking, as well as his six years' varied experience in the hardships of African travel, will lend an important character to this new attempt to penetrate into the unknown interior of the continent.

AT the meeting of the French Geographical Society M. Charles Velain read a paper on the volcanic lakes of the island of Nossi Bé, near Madagascar. The formation of the island is generally volcanic, the north and south parts being of ancient formation, while the central part is of much more recent origin. Besides a number of true volcanic craters, not very high, M. Velain found a great number of crater-lakes or circular troughs, level with the ground and filled with water. These troughs, M. Velain thinks, must have been formed by subterranean explosions, which did not last long enough to enable the lava to reach the surface. These lakes abound in fish, many of which are probably new species; it is impossible, however, to catch them, on account of the number of crocodiles that swarm on the banks.

ENGÄNZUNGSHEFT No. 50 of Petermann's *Geographische Mittheilungen* contains the first part of a narrative of M. E. de Pruyssenaere's Travels in the Region of the White and the Blue Nile. M. de Pruyssenaere was a young and accomplished Belgian who spent most of the time between 1859 and 1864 in the exploration of the above region, and after much difficulty the editor of the narrative, K. Zöppritz, obtained possession of his journals and notes. Notwithstanding the length of time that has elapsed since M. de Pruyssenaere traversed the region, it will be found that his narrative adds considerably to our knowledge of it. He made many botanical notes, which, we believe, will be published at a future time. Accompanying the narrative is a map of the region, showing the traveller's routes, prepared from his astronomical and trigonometrical observations. M. de Pruyssenaere died in the midst of his travels in 1864, at the early age of thirty-eight years.

PROF. C. JARZ, of Vienna, formerly an artillery officer under the Emperor Maximilian of Mexico, has recently issued a short work on "Ocean Currents of the North Atlantic," with especial reference to the Gulf Stream, embodying much of individual observation. The rotation of the earth is excluded from among the causes producing these phenomena. His theory is essentially that each current has its own particular causes, and that a number of independent compensating forces occasion the character, speed, and direction of the currents.

THE last session of the Hungarian Natural History Society was devoted to a detailed account, by M. von Hantken, of the results of his extensive microscopic researches on the Hungarian limestone formations. The old Tertiary deposits near Ofen were found to consist almost entirely of organic remains, principally Algæ, Foraminifera, and Bryozoa. The Algæ form the chief part of several strata and belong to the genus *Lithothamnium*. Microscopic investigation showed a regular structure of successive layers of cells. In the interstices between the cells of the plants carbonate of lime was gradually deposited, and they were petrified entire. The presence of the remains of Foraminifera and Bryozoa showed a contemporaneous zoogenous and phylogenous growth of the rocks. As the *Lithothamnium* of the

present day grows only on the sea-shore, it is probable that these Hungarian limestone deposits are coast formations.

IN the February session of the Hungarian Geological Society, Prof. Krenner displayed a lately-discovered mineral from Nagyág, which consisted of pure telluride of gold. As is well known, gold does not occur in nature in combination with any member of the sulphur-group except tellurium. A mixture of the tellurides of silver and gold was found recently in California, but this is the first instance of the occurrence of the pure auric telluride in a crystalline state. In view of the fact that gold is the noblest metal, and tellurium one of the rarest elements, the new mineral has been called *Bunsenite*, in order to give a fitting expression of the gratitude of the great chemist's admirers in Hungary for the services rendered to mineralogy by his analytical methods.

A REMARKABLE piece of coral taken off the submarine cable near Port Darwin, is spoken of in a Melbourne paper. It is of the ordinary species, about five inches in height, six inches in diameter at the top, and about two inches at the base. It is perfectly formed, and the base bears the distinct impression of the cable and a few fibres of the coil rope used as a sheath for the telegraphic wire still adhering to it. As the cable has been laid only four years, it is evident that this specimen must have grown to its present height in that time, which seems to prove that the growth of coral is much more rapid than has been supposed.

IT is well known that in many places springs of fresh water arise from the bottom of the sea. M. Toselli proposes to make use of them. Their water, brought through flexible tubes held at the surface by suitable buoys, would furnish ships with supplies of water they are often in need of. M. Toselli appears to have studied the question carefully, and provided for the preservation of his apparatus in the face of storms.

THE rapid melting of snow in the mountain regions causes great inundations in south-eastern France and in Switzerland, and Swiss papers daily record the damages done by the floods. The greatest damage is caused by the Doubs, both in France and Switzerland. The Rhine at Basel rose on February 16 by 6.22 metres, reaching thus a level only 2.46 metres lower than during the great inundation of March 1, 1876. Prof. Forel writes to the *Gazette de Lausanne*, that the level of the Lake of Geneva rose on February 15 and 16 at the rate of three millimetres hourly, or 155 millimetres in the course of two days, and he points out that more rapid risings were noticed only three times in the course of the last twenty-nine years (in 1856, and twice in 1876), when the level rose daily 73 to 82 millim. in twenty-four hours. The amount of water accumulated in the lake was thus as large as 42,000,000 cubic metres in the course of a day. The Lake of Zurich rose at the same time 40 centimetres in twenty-four hours; but its superficies being seven times less than that of the Lake of Geneva, the figure shows a far less accumulation of water, viz. of 26,000,000 cubic metres in the course of a day.

As one of the Memoirs of the Geological Survey, Mr. Whitaker has just published a paper on the Geology of the Eastern End of Essex (Walton Naze and Harwich). Longmans and Stanford are the publishers.

WE are glad to hear that an ethnographical museum was opened at Helsingfors on January 24. The nucleus of the museum was formed from collections exhibited at the recent Helsingfors Exhibition. It contains a large number of clothed figures representing the varied ethnographical types of Finland and their yet more varied costumes, interiors of peasant's homes, samples of household furniture and tools, of hunting and fishing implements, of objects used by the yet numerous conjurors, col-

lections of stone implements, &c. The importance of the museum will be well appreciated by all acquainted with the interest afforded by the ethnography of Finland.

THE French Anthropological Society has been authorised by M. Krantz to open an international exhibition in the central palace of the Trocadero. M. Quatrefages has been appointed Chairman of the Commission. Communications relating to the exhibition may be sent either to the Society in Paris or to M. Gabriel de Mortillet, at the Musée des Antiquités Nationales, St. Germain, Seine-et-Oise. The Anthropological Exhibition will be distributed into a number of sections, and several national committees might be established if necessary. Further details will soon be published for the guidance of intending exhibitors or visitors.

ON February 25 the city authorities of Vienna inaugurated a novel and remarkably interesting application of pneumatic tubes for the purpose of maintaining unison and regularity in widely-separated time-pieces. The inventor is the Austrian engineer and electrician, E. A. Mayrhofer, who, after vainly trying to solve the problem by means of electricity, finally hit upon the new system. From a central bureau in the city, connected with the Imperial Observatory, these pneumatic tubes extend in all directions, laid alongside the gas mains, and branching off to the public clocks. By means of a simple apparatus in the latter the authorities in this bureau are able to exhibit the true astronomical time on the clock dials in all parts of the city, a movement of the hands occurring once a minute. At present only the city clocks have been brought in connection with the new system, but it will rapidly be extended, until it embraces the time-pieces in all the schools, public institutions, hotels, &c., and in those private residences where it may be desired.

THE prospects of coffee-cultivation in Coorg seem to be somewhat gloomy, for we learn from a recent report that the plants have not only had to contend with the regular insect and fungoid diseases, but also with such an extremely dry season, that the drainage of the country became very low, and all the springs and wells nearly exhausted. Many of the coffee nurseries had to rely on hand watering from springs and rivulets, and thousands of seedling plants constantly withered and dried up. The greatest damage, however, seems to have been done by what is described as "the planter's old and implacable enemy, the *Xylotrechus quadripes*," commonly called the borer, the ravages of which are as destructive and extensive as ever; planters are often deceived as to the presence of this insect, the appearance of the trees even when attacked, failing to convey an idea other than health. The revelation at crop time, however, convinces the sceptic of the insidious approaches and devastations of the enemy, which can be overcome and subdued only by timely and resolute extermination of every bored coffee tree. The periodical increase of the insects is attributed by residents on or near the plantation to the prevalence of dry seasons. It spreads most in open coffee fields in warm localities, and least in moist and shady places where there is high cultivation. With regard to the *Hemileta vastatrix*, or leaf disease, it seems to have considerably lessened, or, as the report says, disappeared. This is almost more than we can expect, and as much as we can hope for; nevertheless, it may be as the writer of the report says, that the disease is existing under another form, "And may reappear in those well-known orange-coloured spots, for like other fungi it undergoes certain transformations. It is singular that these orange-coloured spores are generally encircling the stomata of the lower epidermis of the leaves, and," the writer proceeds to say, "I have found them even on leaves of coffee-seedlings not one year old. It is difficult to conceive how these spores should have come there, whether from without or within, the whole of the cellular tissue around the spots being affected as by an in-

ternal disease. It seems equally difficult to say, whether the fungus is the cause or effect of the diseased leaf. As to remedies, these appear to be expected rather from climatic influences than from the sagacity of man, for all the propositions yet made may prove satisfactory in the laboratory, but are impracticable where any large area is to be operated upon."

THE subject of blight or disease affecting the plants in the tea plantations of India has been brought prominently under the notice of the Agri-Horticultural Society of India, a letter having been addressed to the society to the effect that the attacks of "blight and red spider having become of such a serious nature on many tea-gardens both in Assam and Cachar, but especially in the latter province, it is necessary that all possible information, with a view of mitigating the evil, should be obtained and made widely known." At a subsequent meeting of the society the line of action proposed, subject to the assistance of those interested in the matter, was to engage the services of an entomologist from England for the period of two years so that he might have time and opportunities to observe and carefully study the character of the several kinds of blight in their various localities; such observations to be published under the auspices of the society.

THE introduction of the Carob (*Ceratonia Siliqua*) into the Madras Presidency, a subject which occupied the attention of the Agri-Horticultural Society of Madras a few years since, has been again brought before the society. It is strongly recommended for cultivation in countries suffering from periodical droughts in consequence of its long roots penetrating a great depth into the earth, and because of the large quantity of mucilaginous saccharine matter contained in the pods, so that it might be largely used for feeding cattle, horses, pigs, &c. It is said, however, that although the seeds contain nitrogenous elements or flesh-making materials, they do not possess great nutritive properties, and the seeds being small and hard they are not easily masticated, and pass in their crude state undigested.

A PECULIAR request (according to the *Bertiner Tageblatt*) has been made by the Society for Bird Protection to the General Postmaster in Berlin, viz., to make arrangements so that birds be not killed by the pneumatic post. The case is this: From the large air-compressing steam-engines proceed chimney-pipes to the roof, by which the required air is sucked in. The power of this suction-apparatus is so great, that both small and large birds, even pigeons, which happen to be flying over the tubes when the engine is in action, are helplessly drawn in and destroyed.

TAKING opportunity, lately, to observe with a Nicol's prism an uncommonly fine rainbow, which spanned the Oesthal in Baden Baden, M. Schiel found that with the prism in a certain position, the colours disappeared completely, and the prism was pretty dark. But on turning it through 90°, the bow appeared again in all its brilliancy. The rainbow is therefore perfectly polarised light. Several rainbows observed since have shown the same behaviour; but apparently only a very bright-coloured rainbow presents dark on the field of vision with the corresponding position of the prism.

THE additions to the Zoological Society's Gardens during the past week include a Macaque Monkey (*Macacus cynomolgus*) from India, presented by Mr. Thos. Dalby; a Galapagan Tortoise (*Testudo elephantopus*) from the Galapagos Isles, presented by Mr. W. H. Henderson; two Herring Gulls (*Larus argentatus*), European, deposited; a Common Nuthatch (*Sitta casia*), European, purchased; a Red Kangaroo (*Macropus rufus*), born in the Gardens.

SCIENTIFIC SERIALS

Poggendorff's Annalen der Physik und Chemie. Ergänzung Band viii., Stück 2.—Researches on the nature of the vowel "clang," by M. Auerbach.—On the interference of reflected light (concluded), by M. Lommel.—On the tension of liquid films, by M. Sondhauss.—On a fundamental law in dioptrics, by M. Most.—On the complementary colours of gypsum in polarised light, by M. v. Kobell.

Memoria della Società degli Spettroscopisti Italiani, November, 1876.—The paper by Prof. Young, of Dartmouth College, on the displacement of the lines in the solar spectrum caused by the sun's rotation appears here. Prof. Young used the spectra of the sixth and eighth orders obtained by a grating of 8,640 lines to the inch, a collimator of 2½ inches diameter, and 16 inches focal length attached to the 9¼ inch equatorial. The observations were made chiefly on the D lines and the Ni line between them giving a result of 1.42 mile a second; this exceeds the result from ordinary observations of spots by 0.34 mile, and the author considers it a fact that the solar atmosphere really sweeps on forward over the underlying surface.—Prof. Tacchini gives a history of his journey up Mount Etna for the purpose of making spectroscopic observations of the sun. The spectroscopic and direct observations of the sun made at Palermo in October last appear here, also the drawings of the chromosphere for May, 1875.

December, 1876.—Father Secchi gives his catalogue of 444 coloured stars with notes on the spectra of the same.—Mr. Huggins contributes a preliminary note on the photography of stellar spectra, together with a drawing of the spectrum of α Lyrae.—Observations of the lunar eclipse of September 3, 1876, by A. Dorna.—Observation of the Perseids made at Palermo in August, 1876, by Prof. Tacchini and G. de Lisa.

Morphologisches Jahrbuch, vol. ii. part 4.—On fossil vertebræ and teeth, by C. Hasse, dealing especially with fossil squatinas from the Jurassic and Cretaceous rocks.—On the development of the auriculo-ventricular valves of the heart, by A. C. Bernays.—On the segmentation of the ovum and formation of the blastoderm in Calyptræa, by A. Stecker.—On the primitive groove in the chick, by A. Rauber.—On the nasal cavities and nasal duct of Amphibia, by G. Born, seventy pages, three plates.

Revue des Sciences Naturelles, vol. v., No. 3, December, 1876.—Contributions to the natural history and anatomy of the Ephemeroidea, by N. and E. Joly, an important paper.—On parthenogenesis in *Bombix mori*, by Carlo de Siebold.—On the histology of the egg, by A. Villot, dealing with theoretical views on the germinal vesicle and its history. There are also excellent reviews of recent French zoology, botany, and geology.

Zeitschrift für wissenschaftliche Zoologie, vol. xxvii., part 4, 1876.—On the anatomy of the Ophiuroidea, *Ophiactis virens*, by H. Simroth, seventy pages, five plates.—On the structure of the brain in Arthropods, a memoir describing the brains of *Apis mellifica*, *Gryllus campestris*, *Gryllotalpa vulgaris*, *Cavabus viol.*, and *Astacus fluviatilis*, by M. J. Dietl, of Innsbruck, thirty pages, three plates.—On the transformation of the Mexican Axolotl into Amblystoma, by Marie v. Chauvin.

Reale Istituto Lombardo di Scienze e Lettere, Rendiconti, vol. x. fasc. 1.—On Arabic money in the numismatic cabinet of Milan, by M. Ghiron.—On the coordinates of points and of lines in a plane, and of points and planes in space, by M. Casorati.—On two meteorological instruments invented by Angelo Bellani, by M. Cantoni.—On special cases of anencephaly, with observations on their etiology, by M. Sangalli.—On *Helminthosporium vitis* (Lev), a parasite of the leaves of the vine, by M. Pirota.—On the phenomena which accompany the expansion of liquid drops, by M. Cintolesi.

Journal de Physique, February.—On a property of an electrified surface of water, and on the polarisation of the electrodes, by M. Lippmann.—On the phenomena of induction (concluded), by M. Mouton.—Comparative pitches of sounds given by various metals and alloys, by M. Decharme.—Experiments of M. Ch. Lootens, S.I.—The movements of the aerial column in sonorous tubes, by M. van Tricht, S.I.—The electric properties of sodium and potassium at different temperatures, by MM. Naccari and Bellati.